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19 ABSTRACT (Continue on reverse if necessary and identify by block number) Cultures of barophilic bacteria from the Pacific Ocean, the Sulu Sea, the Atlantic Ocean, and the Mediterranean Sea are being maintained at their capture depth pressures and at 2°C. A database was used to record the history of each culture. Cultures were sent to three laboratories for research purposes. Yayanos, A.			
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ANNUAL REPORT: Contract N00014-88-K-0505

PRINCIPAL INVESTIGATOR: A. Aristides Yayanos, Scripps
Institution of Oceanography (A-002), University of California
San Diego, La Jolla, CA 92093.

TITLE: Support for a Culture Collection of Deep-sea Barophilic
Bacteria

PERIOD COVERED: 1 July 1988 to 30 June 1989 (year one).

OBJECTIVES: The purpose of this project is to begin to curate a collection of deep-sea bacteria. The specific aims are to maintain cultures of barophilic bacteria, to keep a database on maintained cultures, and to provide cultures of barophilic bacteria to interested scientists.

PROGRESS (YEAR 1):

Cultures: Isolates of barophilic bacteria are from the Pacific Ocean, the Mediterranean Sea, the Sulu Sea, and the Atlantic Ocean. At the beginning of this project, 398 isolates were in need of transfer. Nearly 340 of these were successfully transferred. The cultures are kept in pressure vessels and at the capture depth pressure and temperature. So far preservation by lyophilization is unreliable. Preservation of frozen cell pellets with cryoprotectants is being evaluated and may offer an alternative storage method.

Database development: The R:BASE software package was used to develop a program that provides the history of each isolate, schedules future transfers, and identifies the pressure vessels where the cultures are stored.

Use of the culture collection: Cultures of isolate SS9 from 2,500m in the Sulu Sea, isolate PE36 from 3,600m of the Pacific Ocean, of CNPT3 from 5,800m of the Pacific Ocean, and isolate MT41 from 10,500m of the Pacific Ocean were sent to three laboratories in the U.S. for work under ONR contracts and NSF grants.

Future plans: Proposals are being prepared to have the culture collection supported by the State of California and by the NSF.



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